WHAT IS CLAIMED IS:

~~CLAIMS~~

1. Process for controlling the precipitation of a BAYER circuit including a preliminary agglomeration phase (A), a crystal growth phase (N) and a classification phase (PT; ST; TT), in which the particle size quality of the hydrate produced is monitored by making a measurement (M2) of the amount of rotating hydrate in the feed tanks, characterized in that it comprises:

a) a preparation step carried out once and for all, intended firstly to setup a relation R in intensity and in time between the rotating hydrate material passing X1 µm and material passing X2 µm, where X1 is less than X2, and secondly to define trigger thresholds on the value of material passing X1 µm, starting from the maximum authorized variation interval on values passing X2 µm;

b) control of the process itself, carried out during the installation operating period which, apart from the daily measurement (M2) of material passing X2 µm and a regular update of the correlation between the said material passing X2 µm and the particle size of the hydrate produced, a daily measurement (M1) of the rotating hydrate passing X1 µm and a regular update of the relation R between the said material passing X1 µm and the said material passing X2 µm, and triggering of corrective action on the slurry at the beginning of the precipitation when the measured value of material passing X1 µm reaches one of the

regularly updated trigger thresholds determined in the previous step.

2. Process for controlling the precipitation of a BAYER circuit according to claim 1, characterized in that the said corrective action includes modification of the solid content in the slurry at the beginning of the precipitation.

3. Process for controlling the precipitation of the BAYER circuit according to claim 2, in which the modification in the solid content in the slurry at the beginning of the precipitation is achieved by modifying the proportions of aliquots (1a) and (1b) of the pregnant aluminate liquor (1) feeding the first agglomeration tank (A) and the first feed tank (N), respectively.

4. Process for controlling the precipitation of a BAYER circuit according to ~~one of claims 1 to 3~~, characterized in that X2 is greater than 40 µm and X1 is less than 20 µm.

5. Process for controlling the precipitation of a BAYER circuit according to ~~any one of claims 1 to 4~~, characterized in that the measurements of material passing X1 µm and X2 µm are made on the slurry (5) at pump-off.

6. Process for controlling the precipitation of a BAYER circuit according to ~~one of claims 1 to 5~~, characterized in that the concentration of pregnant aluminate liquor (1) is less than or equal to 160 g of Na2O/ liter.